

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1-20 (Canceled)

21. (New) A process for separation and purification of a crude mixture comprising hydroquinone and resorcinol, in which process the crude mixture is first subjected to a series of distillation stages comprising:

(i) subjecting the crude mixture to a distillation stage (II) designed to produce, as a distillation top product, a resorcinol-rich fraction comprising resorcinol, essentially, and hydroquinone;

(ii) subjecting a distillation bottom product obtained by step (i) to a distillation stage (III) designed to produce, as a distillation top product, a hydroquinone-rich fraction comprising hydroquinone, essentially, and resorcinol;

and then subjecting the hydroquinone-rich fraction and/or the resorcinol-rich fraction to a refining stage (IV or V) in order to extract the hydroquinone and/or the resorcinol, respectively, wherein the refining stage comprises successive cooling/crystallization, draining of a eutectic, reheating and draining a liquid fraction, and then melting-recovering a crystallized fraction.

22. (New) The process according to claim 21, wherein the hydroquinone-rich fraction obtained by distillation stage (III) is submitted to a refining stage comprising the following successive phases:

phase 1 : slow cooling of the fraction for 5 to 15 h until a temperature of between 90 and 130°C is reached;

phase 2 : draining the liquid fraction;

phase 3 : slow reheating for 8 to 24 h until a temperature of between 170 and 173°C is reached, and draining the liquid fraction; and

phase 4 : heating to 178°C and recovering hydroquinone.

23. (New) The process according to 22, wherein, before phase 1, the hydroquinone-rich fraction is heated above the melting point of hydroquinone.

24. (New) The process according to 23, wherein, before phase 1, the hydroquinone-rich fraction is heated to a temperature between 175 and 180°C.

25. (New) The process according to claim 23 or 24, wherein phase 3 is stopped when the temperature reaches 171°C.

26. (New) The process according to any one of claims 21 to 24, wherein stages (II) and (III) are performed so as to obtain at the top of stage (III) a hydroquinone-rich fraction comprising from 75 to 98% of hydroquinone and from 2 to 25% of resorcinol, these percentages being expressed with respect to the sum of hydroquinone and resorcinol.

27. (New) The process according to claim 26, wherein said hydroquinone-rich fraction comprises 85 to 97.5% of hydroquinone and 2.5 to 15% of resorcinol.

28. (New) The process according to claim 21, wherein the resorcinol-rich fraction obtained at the top of stage (II) is submitted to a refining stage comprising the following successive phases:

phase 1 : slow cooling of the fraction for 5 to 15 h until a temperature of between 40 and 90°C is reached;

phase 2 : draining the liquid fraction;

phase 3 : slow reheating for 8 to 15 h until a temperature of between 109 and 111°C is reached, and draining the liquid fraction; and

phase 4 : heating to 115°C and recovering hydroquinone.

29. (New) The process according to claim 28, wherein, before phase 1, the resorcinol-rich fraction is heated above the melting point of resorcinol.

30. (New) The process according to claim 29, wherein, before phase 1, the resorcinol-rich fraction is heated to a temperature between 115 and 120°C.

31. (New) The process according to claim 28 or 30, wherein phase 3 is stopped when the temperature reaches 111°C.

32. (New) The process according to any one of claims 28 to 30 wherein stage (III) is performed so as to obtain at the top of stage (II) a resorcinol-rich fraction

comprising from 75 to 98% of resorcinol and from 2 to 25% of hydroquinone, these percentages being expressed with respect to the sum of hydroquinone and resorcinol.

33. (New) The process according to claim 32, wherein said resorcinol-rich fraction comprises 85 to 92% of resorcinol and 8 to 15% of hydroquinone.

34. (New) The process according to claim 21, wherein refining of the rich fractions is conducted on a drainer.

35. (New) The process according to claim 21, wherein the crude mixture further comprises catechol and stage (II) is preceded by a distillation stage (I) designed to produce catechol as distillation top product, and the distillation bottom product is used to feed stage (II).

36. (New) The process as claimed in claim 35, wherein stage (I), when it is present, or stage (II) is preceded by at least one predistillation stage (1,1') designed to produce, as bottom product, a tar-rich fraction and, as top product, a detarred fraction which is used to feed stage (I) or stage (II).

37. (New) The process as claimed in claim 36, wherein two predistillation stages (1, 1') are provided, the tar-rich bottom fraction from the first predistillation stage (1) being used to feed the second predistillation stage (1') and wherein the two detarred top fractions are used to feed stage (I) or (II).

38. (New) The process as claimed in claim 35, wherein the distillation column for distillation stage (I) has
from 5 to 40 theoretical stages; and
a reflux ratio R of between 1 and 10.

39. (New) The process as claimed in claim 38, wherein the distillation column has 10 to 30 theoretical stages.

40. (New) The process as claimed in claim 38, wherein the reflux ratio R is between 2 and 5.

41. (New) The process as claimed in claim 21, wherein the distillation column for distillation stage (II) has
from 10 to 85 theoretical stages; and
a reflux ratio R of between 1 and 35.

42. (New) The process as claimed in claim 41, wherein the distillation column has 15 to 40 theoretical stages.

43. (New) The process as claimed in claim 41, wherein the reflux ratio R is between 5 and 25.

44. (New) The process as claimed in claim 21, wherein the distillation column for distillation stage (III) is a scraped falling film device or a distillation column having

from 1 to 10 theoretical stages; and
a reflux ratio R of between 0.5 and 5.

45. (New) The process as claimed in claim 44, wherein when the column is a distillation column, the column has 1 to 5 theoretical stages.

46. (New) The process as claimed in claim 44, wherein when the column is a distillation column, the reflux ratio R is between 1 and 2.

47. (New) The process as claimed in claim 36 or 37, wherein the column or columns for the predistillation stage (1, 1') is/are scraped falling film devices.

48. (New) The process as claimed in claim 21, wherein the crude mixture comprises, with respect to the total mixture:

from 20 to 60% by weight of hydroquinone;
from 2 to 20% by weight of resorcinol;
from 0 to 20% by weight of catechol; and
the remainder being formed of various compounds, essentially tars.

49. (New) The process as claimed in claim 48, wherein the mixture comprises 30-50% by weight of hydroquinone.

50. (New) The process as claimed in claim 48, wherein the mixture comprises 2 to 15% by weight of resorcinol.

51. (New) The process as claimed in claim 48, wherein the mixture comprises 5 to 15% by weight of catechol.